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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Gulf Breeze Environmental Research Laboratory  
Sabine Island, Gulf Breeze, Florida 32561

DATE: July 2, 1974

SUBJECT: Trip to Russia: Part I - Summary and Suggestions

FROM: Thomas W. Duke  
Laboratory Director, GBER

TO: Dr. Eric Schneider  
Director, NMWRL

Dr. Ted Rice and I completed our lecture tour of the Soviet Union as planned. The trip was profitable since we had an opportunity to present lectures and to interact with investigators from the University of Moscow and various institutes and laboratories within the Soviet Union. We are jointly preparing a detailed report of our trip, including names of investigators and institutions that we visited, and will submit this report within the next two weeks. The purpose of this memorandum is to give you a brief summary of our trip and to make suggestions for other lecturers who will follow.

We began our tour by presenting our lectures at Moscow State University and visiting various departments at the University. We each presented a general lecture on the state-of-the-art of our particular subjects on Monday, June 3, and a second lecture of a more technical nature on Tuesday, June 4. A professional interpreter translated for us; this required about twice as much time as normally required. The use of slides (2x2") as visual aids was a help to the interpreter and to the audience. Also, several investigators at the University presented their research findings to us on Wednesday, June 5.

Our next stop was in Sevastopol, where we visited the Institute of Biology of the South Seas and particularly the new radioecology laboratory directed by Dr. Polikarpov. Again, we presented our general lectures and were informed of research underway at the new radioecology laboratory. We also visited various departments in the Institute involved in expeditions into the Black and Mediterranean Seas. From Sevastopol, we proceeded to Leningrad, where we met with two scientists from the Institute of Biology in Riga. These scientists were particularly interested in research with pesticides. We also visited with members of the Zoological Institute of the Academy of Sciences in Leningrad, then proceeded by train to a laboratory of the Institute located at the White Sea. Again, we presented lectures, visited laboratory facilities and discussed scientific activities with investigators at the laboratory on the White Sea. From here, we traveled by boat across the Arctic Circle to Dr. Federof's establishment for further talks. We returned to Moscow from the White Sea by the Murmansk-Moscow express train, and were able to enjoy the changing landscape and rest a bit for the return trip to the U.S.A.

We were well received at each stop on our tour and the tour proceeded without a hitch and according to schedule. After this experience, I have some comments that will be of help to those who follow us:

- (1) Prepare two lectures, one of a general nature and the second of a more technical nature describing work of your particular interest. Giving lists of investigators concerned with your scientific interest in the U.S.A. The use of slides as visual aids was much help to us, although on one occasion a projector was not available and we talked from notes.
  - (2) Be prepared to receive tokens of appreciation from those you visit. They, in turn, are very appreciative of a token from you, such as a commemorative coin or symbol of an agency or a university or a small book on wildlife in the United States.
  - (3) Take shoes and other clothing suitable for hiking.
  - (4) Don't count on changing the itinerary once it is set.
- The Soviet scientists, in general, received us warmly, talked freely and at length about their work, and supplied us with reprints. Based on our experience, I believe the visiting lecturer can anticipate a pleasant, informative and tiring trip.

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SUBJECT: Trip to Russia: Part II - Administrative DATE: July 2, 1974

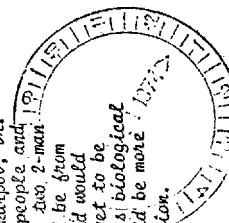
FROM: Thomas W. Duke *T.W. Duke*  
Laboratory Director, GBERL

TO: Dr. Eric Schneider  
Director, NWGL

While at the White Sea, Mr. Kouushinikov met with Federov, Mitronov, and others and then asked that I relay the following information to you. Mr. Kouushinikov said that as suggested in your meeting in November, 1973, the Joint Program now has a theme of chemical monitoring and would be headed by Dr. Simonov. Topics under this major heading include biological monitoring which would be headed by Dr. Federov. He suggested that it was difficult for the Soviets to handle many or several delegations and they suggested for the remainder of this fiscal year that the United States send two delegations - the first on chemical monitoring which would include Gerdberg, Folsom and others and they would like for this to be two weeks at the end of September or in October and they would like to know the time of arriving, etc. The second delegation would be concerned with biological monitoring and would consist of Yanish, Odum, Dukes (from Rhode Island) and others. Dr. Federov will be on expedition until the first of October; therefore, this second delegation should visit sometime after the first of October.

According to Kouushinikov, the second part of May and first part of June is best time for visits for delegations to appear in the summer as the second part of June, July, and August was inconvenient because the scientists were on expeditions and the weather was not good as earlier or later (end of September, early October). In addition to discussing the chemical and biological monitoring aspects of the program, the American delegation would be expected to present lectures and become acquainted with laboratory workers. They are particularly interested in general talks and suggest the lecturer bring a list of U.S. scientists working in the particular area of research so that collaborative work could be established.

They propose that their first delegation visit the United States August 16 and this would consist of Dr. Maximo, Dr. Polikarpov, Dr. Tobin and Dr. Kilebovich. They would like to send four people and if the American delegation prefers they could split into two 2-man delegations after arriving. The second delegation would be from November 10 through 24 and would be headed by Federov and would include Dr. Mitronov. The third and fourth members are yet to be named. The second delegation will be prepared to discuss biological monitoring and other fields. The second delegation would be more specific on biological monitoring than the first delegation.



2

As agreed upon earlier, American delegations visiting the U.S.S.R. and vice-versa would receive side pay as a pay basis. Mr. Kouushinikov suggested that Dr. Schneider write Simonov concerning these items. Also, there is now a flight from Moscow to Dulles in Washington and Kouushinikov wanted to know if it would be possible for the delegations to arrive in Washington as opposed to New York City.

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SUBJECT: Trip to Russia: Part III - Detailed Account DATE: July 2, 1974

FROM:

Thomas W. Duke *T.W. Duke*  
Laboratory Director, GBERL

TO:

Dr. Eric Schneider  
Director, NMWOL

Arrived at Moscow International Airport at 12:10 p.m., Sunday, June 2 and were met by Dr. Vadim Fedorov and Dr. K. S. Buxidin. We discussed, through an interpreter, our itinerary for the next two weeks and agreed to the following schedule:

June 3-5: Moscow State University

June 6-8: Institute of Biology of South Seas, Sevastopol

June 9-10: Zoological Institute, Leningrad

June 11-15: Kazakh Laboratory and Laputza Laboratory, Murmansk District in the Gulf of Kandalaksha and the White Sea

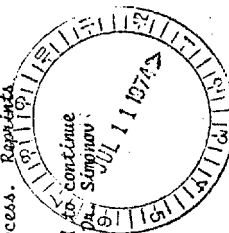
On the morning of June 3, we met with Mr. Boris Kouzhinnikov, Councilor, the USSR-US Committee on Environmental Protection, Main Administration of Hydrometeorological Services of the USSR who prepared our visas and gave us 10 rubles per day for 11 days (Buxidin had given us the amount of 5 days on Sunday).

Moscow State University  
Monday, June 3

Dr. Vadim Fedorov presented us to the faculty of the Department of Hydrobiology and other departments. We presented a general slide talk of our laboratories and respective research activities. A discussion followed each presentation.

After lunch in the faculty dining hall, we were given a tour of Department of Biophysics by Dr. B. N. Tarusov, head of the department, who explained research concerned with measuring changes in potential of cell membranes as an indication of stress-pollutants and other factors; employed luminescence in measuring oxidative process. Reprints supplied.

We were invited to Dr. Fedorov's flat for dinner and to continue scientific discussions with members of faculty including Dr. Siminov who accompanied us to the flat.



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Tuesday, June 4

We gave technical talks. Rice on radioecology and Duke on toxic organics. Discussions followed. Soviets especially interested in development, reproduction and genetic effects. Discussions with individuals continued throughout the afternoon.

Wednesday, June 5

Met with members of faculty who presented their research activities.

Dr. Shekhanova, Chief, Radiobiological Laboratory, Institute of Oceanography and Marine Fisheries talk concerned with radioisotopes in fish and genetic and somatic effects on fish. There was an unusual interest in genetic changes in chromosomes and somatic changes in the structure of the eye.

Also, Dr. S. A. Patin discussed radioactive and chemical effects. His group concerned not only with radioactivity, but also with problems relating to monitoring, heavy metals, and oil pollution. Interested in global pollution.

Dr. Nestorova, Institute of Oceanology of the USSR Academy of Sciences, discussed oil pollution and the effects of temperature and salinity on adaptation. Primary interest was in physical aspects of oil pollution and methods of reducing toxicity effects of oil when it is released into the water.

Dr. T. Vorobeyeva, Biophysics Department, discussed methods of determining toxicity effects at the cellular level. Their studies on membrane potentials have been carried out with plant cells only.

Departed by air about 8:30 p.m. for Simferopol arriving at 10:30 p.m. Driven by car to Yalta -- arrived at midnight. Yalta was our base of operations while visiting the Institute of Biology of South Seas, Sevastopol.

Thursday, June 6

Departed Yalta at 10:00 a.m. -- arrived by automobile in Sevastopol about 11:00 a.m. and immediately met the Director of the Institute who gave us a brief overview of his Institute.

Dr. Polikarpov conducted a tour of their new radioecology facility. This facility is well designed and built for broad use of radioactive material as tracers and effects of radiation. Staff was in process of moving in but some detection equipment -- multi and single channel

detectors were evident. As we visited each major laboratory, the chief investigator presented a brief description of his work which included: physical description of coastal currents, etc. in Black Sea, phytoplankton identification and enumeration from Black Sea, monitoring radionuclides in marine mammals, particularly St-90, and general phytoplankton culture and physiology studies.

#### Friday, June 7

Dr. Rice and Dr. Duke presented general talks on radionuclides and pesticides which were followed by discussions with individual staff members. Much interest expressed in techniques employed in both our laboratories. Tour of local monuments made in late afternoon. Laboratory staff supplied us with reprints.

#### Saturday, June 8

Departed for Leningrad.

#### Sunday, June 9

Conferred with Gunars Andrusaitis, Director of Biology Institute at the Academy of Sciences, Latvian SSR, and Juras Zvirgds from Riga concerning pesticides and marine ecology. The Institute of Biology is interested primarily in pollution of the Baltic Sea and have divided their research into five general areas:

1. Self-purification of rivers.
2. Radiocology - monitoring for Sr-90 and Cs-137.
3. Pollution of coastal waters.
4. Hydrochemical Laboratory which deals with special problems of oil and sea water.
5. Biochemistry and physiology of aquatic organisms.

Juras Zvirgds, Deputy Director, discussed this research since he accompanied Dr. Gunars Andrusaitis to Leningrad. Primary interest is in oxidative phosphorylation in liver. Dr. Andrusaitis has 80 people working in his group. About half are scientists.

#### Monday, June 10

Leningrad - Zoological Institute, Academy of Sciences, USSR

Dr. George Winberg discussed his activities with International Biophysical Program - generalized productivity of northern lakes - dynamics and computer productivity on different trophic levels.

Alexander N. Golikov, Head, Marine Research Laboratory. Interested in structure of populations of benthos on shelf. Publications on for east Japanese Sea (two volumes) in relation to seasonal changes. Primary concern with scallop production on continental shelf and Island of Spitzbergen. Concerned with productivity at Karlish Laboratory in Arctic and, also, production in Antarctica. All work done with help of frogmen. Much interest taxonomy. Specialist in gastropods.

#### Tuesday - Friday, June 11-14 Karlish Laboratory

Our last stop was at the Karlish Laboratory on the White Sea. Evidently, this Laboratory, directed by Dr. Khebovich, is connected administratively with the Institute in Leningrad. We presented lectures and had the following discussions with staff members:

- A. E. Kulakovskii - Endocrinology in life cycles and adaptation - process of invertebrates - morphology, and its development - phyta and ontogeny - cycling of elements to homeotherm - animals include polychaetes, molluscs, crustaceans
- B. T. K. Katueva - Life cycles and growth of brown algae.
- C. D. Khatulin - Influence of conditions of river on development and growth in salmonids including White Sea and Baltic.
- D. Oleg Ivanchenko - Life cycle of herring - egg to adult - category of herring rearing from eggs to juveniles - morphology and systems. Determination of stage of development.
- E. V. Kulachkova - Parasites in marine birds of White Sea - development of parasites through different stages until adults in fishes. Parasites in "new" species of salmon (red) reared in White Sea. Main work centered around parasites of herring in White Sea. Parasites can be used to separate sub-species. Ascarides present in herring and dangerous to man. Investigations show parasites widespread but do not know why.
- F. Regina Prigunukova - Studies zooplankton from station near Lab which are collected each 10 days. Prediction of plankton development - correlation between occurrence of plankton in September and the following year.

In the White Sea area we also visited Laputza, the base of operations for Moscow State University expeditions headed by Dr. Vadim Fedotkin. We discussed various scientific aspects of the Joint Agreement and toured this quaint island in the White Sea.

We were transported by boat to the village of Chupa where we boarded the Mermansk to Moscow express and completed our tour of Russia and Moscow at 6 a.m., Sunday, June 16.

5

Dr. Vadim Fedorov, Head  
Department of Hydrobiology  
Moscow State University  
Moscow M-234  
U.S.S.R.

Dr. Vladimir Khlebnovich, Director  
Kartish Laboratory  
Zoological Institute Academy of Sciences  
Leningrad, 199164  
U.S.S.R.

Mr. Gennadiy Andrushevich, Director  
Biology Institute at the Academy of Sciences  
Latvian SSR  
Riga, Latvia

Dr. G. G. Polikarpov  
Director, Radiobiological Laboratory  
Dr. V. Oleg Mitrokhin, Deputy Director  
Institute of Biology of South Seas  
Academy of Sciences U.S.S.R.  
2, Vakhtang St., Sevastopol  
U.S.S.R.

Mr. Boris A. Kovshinskiy  
Councillor, The USSR-US Committee on Environmental Protection  
Main Administration of Hydrometeorological Services of the USSR  
Pereulok Pavlita Morozova, 12  
Moscow, D-376  
USSR

Dr. K. S. Bardin  
Department of Biology  
Moscow State University  
Moscow, B-234  
USSR